**AP Biology Exam Tips 2016!**

Mrs. Krouse

**Test Date and Time:**

The AP Biology exam will be given in the morning session (8 AM) on Monday, May 9th. The test location will be announced closer to the day of the test. Check in with your first period teacher at 7:30 and then head IMMEDIATELY to your exam location. If you need to drop off your backpack and electronic devices with me, please stop by my room (3073). I prefer if you stop by before school, but if you absolutely must drop your stuff off after you check in with your first period teacher, that is ok.

*Note: There are three AP Bio teachers so the proctor will ask you to record the section number that corresponds to your teacher. I will let you know our section number closer to the exam day****.*** *They may announce this on the exam day, but they will probably use my married name (Mrs. Krouse), not Ms. Ottolini!*

**The Night Before the Test:**

* At this point, you should not try to cram any more information!!! You should have a relaxed evening, minimize your studying, and go to bed early!
* Put the materials listed in the “Things to Bring to the Test” section in your backpack in a plastic Ziploc bag.

**The Morning of the Test:**

* Eat a good breakfast and drink water! Breakfast is good for the brain!!!
* I will have snacks in my room (3073) just in case you did not get a chance to eat breakfast. Stop by before school to grab a snack! These snacks are available to you (my students) but not students from other teachers. Remember, I am not made of money… please do not bring your friends from other teacher’s classes to get food.
* Check to make sure the materials listed in the “Things to Bring to the Test” section are in your backpack in a plastic Ziploc bag before you leave the house.

**Things to Bring to the Test:**

* A picture ID (your school ID or driver’s license will work)
* A watch (Note: the alarm CANNOT go off during the test)
* #2 pencils for Section I of the test (Note: they cannot be mechanical pencils even if they say #2 on the side; my suggestion is to use Ticonderoga pencils, they are the BEST!)
* Pens with black or dark blue ink for Section II
* A four-function calculator (BRING YOUR OWN; only in absolute emergencies will I provide a calculator to a student on the day of the test)
* I suggest bringing these materials in a plastic Ziploc bag so that it is VERY clear you do not have any unauthorized materials.

**Things you CANNOT Bring to the Test:**

* Your backpack
* ANY review materials (or paper of any kind)
* ANY electronic device
* ANY food or drink (even a bottle of water!)

***Note: PLEASE do not bring any unauthorized materials to the test room. You do not want to be the reason that everyone’s test score is invalidated. Do NOT be that person. Everybody hates that person!***

**A Reminder Regarding the Test Format:**

The AP Biology Exam is 3 hours in length. There are two sections.

* Section I is 90 minutes and consists of 63 multiple-choice questions and 6 grid-in questions accounting for 50 percent of the final score.
* Section II is 90 minutes and consists of 2 long free-response questions and 6 short free-response questions accounting for 50 percent of the final score. It begins with a 10-minute reading period to read the questions and plan your answers. The remaining 1 hour and 20 minutes is for writing. The 2 long free-response questions should require about 22 minutes each to answer and should be about three paragraphs in length. Questions 3 through 8 are short free-response questions and should require about 6 minutes each to answer. These should be about 4-6 sentences in length.
* There will be a 10 minute break between Section I and Section II. You are not allowed to discuss the test with ANYONE during this time. You cannot use any electronic device (including calculators) during this time either. If you do so, you will risk your score and the scores of all others in the testing room being invalidated.

**Tips for the Multiple Choice Questions (Section I)**

* There is no penalty for guessing, so record an answer for each question!
* If there is a very long prompt followed by a diagram… try looking at the diagram, question, and answer choices before reading the prompt. Sometimes you can determine the answer without reading the prompt, but sometimes you will need to go back and read the prompt carefully. It really depends on the question!
* If the question asks you to infer information directly from a paragraph scenario, a chart, or graph, several answer choices might be logical, but you should choose the one that can be most DIRECTLY inferred from the data given. These questions are often written using the wording that follows: “Which statement / conclusion is best supported by the data presented?”
* If the question asks you to determine the most IMMEDIATE effect of a particular event, several answer choices may include correct effects, but you should choose the one that happens RIGHT AFTER the event.

Example Question *(answer in italics)*:

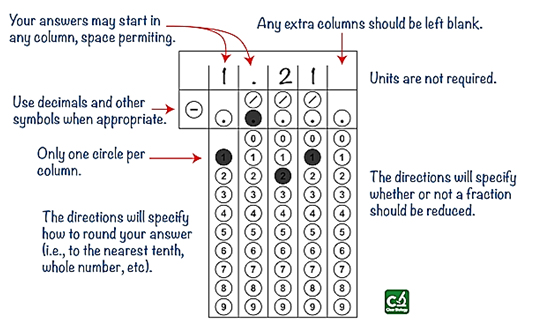
A human kidney filters about 200 liters of blood each day. Approximately two liters of liquid and nutrient waste are excreted as urine. The remaining fluid and dissolved substances are reabsorbed and continue to circulate throughout the body. Antidiuretic hormone (ADH) is secreted in response to reduced plasma volume. ADH targets the collecting ducts in the kidney, stimulating the insertion of aquaporins into their plasma membranes and an increased reabsorption of water.

If ADH secretion is inhibited, which of the following would initially result?

1. The number of aquaporins would increase in response to the inhibition of ADH.
2. The person would decrease oral water intake to compensate for the inhibition of ADH.
3. Blood filtration would increase to compensate for the lack of aquaporins.
4. *The person would produce greater amounts of dilute urine.*

*Answer Explanation: If you read the question carefully, it becomes clear that ADH causes re-absorption of water into the blood plasma. In other words, your urine contains less water. Thus, you can infer that if ADH secretion is inhibited (prevented), your body would initially produce urine containing more water. Technically, option “C” is a plausible answer. However, the question asks for the “initial” effect – before the body has a chance to respond chemically / physiologically.*

**Tips for the Calculations Questions (Section I):**

* If a diagram is provided, analyze the diagram before you start calculating. You have to know what you are looking for!
* Sometimes you will not need to use one of the formulas from the formula sheet to calculate the right answer. Don’t panic if this is the case!
* You are given a formula sheet for both Section I and Section II. You will definitely need it for Section I (multiple choice and grid-in) and they may incorporate a formula into one of the long or short response questions in Section II (ex: chi square calculations are often required in long response questions).
* Don’t round your work until you get to the answer!
* Read the directions carefully for each question you answer. The question will indicate whether you should round to the nearest whole number, tenth, hundredth, etc. If you round to a different place, your answer will be scored as INCORRECT!
* With your four function calculator, there is no exponent function. You must use the “old school” method of multiplying a number by itself to square it.

**Example:** 23 = 2 X 2 X 2 = 8

* The “Grid-In Chart” (see right)

**Tips for the Free Response Questions (Section II):**

* During the 10 minute reading period, you can only write on the UNLINED pages. Your test score may be invalidated if you write on the lined pages during this time.
* During the 80 minute writing period, write your responses in black or dark blue ink on the lines provided.
* Pace yourself… I suggest taking 22 minutes to answer each long response question and 6 minutes to answer each short response question. Your long responses should be about three paragraphs in length, and your short responses should be about 4-6 sentences in length.
* Read the question through twice. Underline and pay close attention to the verbs used in the directions (ex: describe, explain, compare, give evidence for, graph, etc.). Usually, there are points in the scoring rubric associated with EACH verb.

*Note: If you see the phrase “Propose a Model” in a question, they are asking you to provide a POSSIBLE explanation for some experimental results that they have given.*

* Be sure that you answer all parts of the question. If you are given a choice of two topics within a question, choose carefully and do not answer both.
* When writing your response, label the parts of the response with “a’s, b’s, c’s, etc.”, as they are labeled in the question. Do not skip around within the question!
* Write an essay, meaning paragraphs with complete sentences (never bulleted lists with short phrases). If you include a diagram, label it properly and make sure its relevance is explained in the text. Draw your diagram where it is mentioned in the text, not at the end of the essay. You will never receive points for a diagram alone, only for your explanation of the diagram.
* Do not include broad introductory statements or conclusions. Just get to the point, and answer the question.
* Answer the question thoroughly. No detail is too small if it is relevant. Examples are always appropriate. Be sure to include the obvious… most points are earned for the basics!
* Define your terms. Say something about each of the terms you use. If you can’t recall a specific term, take a stab at it or simply describe the concept.
* Do not underline terms that you feel are “key words / buzz words.” It makes your response more difficult to read for the grader.
* Write as neatly as possible (in ink) and scratch out errors using one or two lines (i.e., neatly!)
* Don’t worry about spelling or using perfect grammar. These are not part of the standards the graders use.
* Make an effort on every question. Don’t leave essay questions blank.
* Understand that the exam is written to be hard. The average long response score is about 50% correct. It is very likely that you will not know EVERYTHING, so relax and write thorough answers. Don’t panic if you are unfamiliar with a question. Be calm and think; you probably know something about the topic. Remember that no points are subtracted for incorrect information.
* There may be a free response question that requires you to design an experiment. For these questions, you should include the following elements in your response.

1. Provide a hypothesis that is reasonable, testable, and measurable *(Hint: it is easier to design a testable hypothesis if you put it in “If, then” format)*
2. Identify your independent variable (the manipulated variable)
3. Specify the different levels of treatment for your independent variable
4. Identify your dependent variable
5. Explain how you will measure your dependent variable
6. Identify your control group (the group not exposed to the independent variable)
7. Identify three constants in your experiment (factors that are the same between your control and experimental group)
8. Identify organisms / materials / tools used in your experiment
9. Specify the length of the experiment and the frequency of measurements
10. Specify the number of trials you will use (*Remember: repeated trials improve the accuracy of your data)*
11. Explain how you will analyze your data (*Will you use a chart or graph? How will you draw conclusions from these data analysis tools?)*
12. Explain how your results will allow you to draw certain conclusions, and compare your conclusions to your original hypothesis

* For example, let’s say I was trying to determine if differing amounts of water affected the growth rate of tomato plants. For the 12 requirements specified on the previous page, I might include the following information (in paragraph form, of course!) The requirements do not have to be addressed in any particular order in your response.

1. My hypothesis is, “If tomato plants are given increasing amounts of water, their growth rate will increase.”
2. The independent variable is the amount of water given to the tomato plants.
3. There will be four levels of treatment for the independent variable based on the amount of water given to each plant daily (0 mL, 100 mL, 200 mL, 300 mL).

*Note: I just made these numbers up… that’s totally ok and even expected! You should definitely specify numbers where possible!*

1. The dependent variable is the change in height of the plants.
2. I will measure the height of each plant in cm.
3. My control group is the group of plants that receive 0 mL of water.
4. Constants for this experiment include the amount of sunlight, the type of soil, and the type of plant.
5. I will plant each tomato plant in a pot with potting soil.
6. I will measure the height of each plant every day for 10 days.
7. I will use five plants in each treatment group. Having multiple trials (i.e. plants) for each treatment group will improve the accuracy of my data.

*Note: It’s important to explicitly state that having multiple trials will improve the accuracy of your data.*

1. I will record my data in a chart and find the average total change in height of the plants in each treatment group each day for 10 days. I will graph these averages in a scatter plot and use a different color trend line for each treatment group. In my scatter plot, the x axis will represent the time for growth (in days), and the y axis will represent the average total change in height of the plants (in cm). The chart and scatter plot will allow me to see which group of plants has the highest growth rate (i.e. the average total change in plant height over 10 days).
2. If the plants receiving 300 mL of water each day have the highest growth rate, this data supports my hypothesis. If the plants receiving 300 mL of water each day do not have the highest growth rate, this data does not support my hypothesis.

* Some free response questions will ask you to graph a data set and then analyze your graph. When constructing a line graph, follow the steps below:

1. Label your axes with the independent variable on the x-axis and the dependent variable on the y-axis (with units!)
2. Mark off axes in equal increments (all the way to the end of the axes!)
3. Plot points and attempt to sketch in the curve (line)
4. If more than one line is plotted, label each one and include a key / legend
5. Give the graph an appropriate title that includes both the independent and dependent variable and information from the key, where applicable. (Example Title: Oxygen Produced by Leaf Cells over Time)